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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,309	07/23/2003	Luis A. Diaz	INST458CON2	8382

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EXAMINER	
HORN, ROBERT WAYNE	

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 11/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/625,309	DIAZ ET AL.	
	Examiner	Art Unit	
	Robert W. Horn	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *117-126* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *117-126* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The examiner acknowledges amendments dated 9/26/2006. With the amendments, claim 108 has been cancelled and claims 117-126 have been added. The examiner objects to the new claims for using language not supported by the specification. The examiner acknowledges a change in the title. The amended title is accepted as compliant to 37 CFR 1.76.

Response to Arguments

Applicant's arguments filed 9/26/2006 have been fully considered but they are not persuasive. The claims as presented are new and present the applicants subject matter in a different way than previously presented.

Claim Rejections - 35 USC § 112

Claims 117-126 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In regards to claims ( ) the specification does not teach the following claim language:

(117, 121) supplying a first or a second signal from the power supply;

(117, 125) if the motor speed stabilizes, monitoring the power supply voltage;

(121) when the motor speed stabilizes, monitoring the power supply voltage;

(120) user entered commands or a motor speed controller;

(123) user actuation of the motor;

The examiner believes that the changes in language of the new claims, subtly deviate from the supported language of the specification to such a point that the claims do not comply to 35 USC § 112, first paragraph. No new material, even via subtle changes in claim language may be incorporated in an application after the first action on the merits.

The examiner will prosecute claims 117-126 as supported by the specification, especially pages 8 and pages 23-29.

Based on the language supported by the specification, claims 121-124 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 117-120. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 117-126 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green et al. (U.S. Patent 5887,281), Bertone (U.S. Patent 4,241,299), and Hollenbeck (U.S. Patent 5,682,826).

Regarding claim 117, Green et al. teaches a method for maintaining a constant volume of air flowing into an air filtration system during the use of the air filtration system, the air filtration system (figures 1-13) including: a hood 100 adapted to be worn over the head of a user; a fan 130 beneath the hood; a motor 1262 for driving the fan 1250; and a power supply for powering the motor (battery pack, column 4, lines 31-32). and method step

driving the fan with the motor so as that the fan causes air to flow through the hood (abstract);

to deliver the controlled air flow and air filtration that is desired (abstract, lines 4-5).

Green does not teach the motor control aspects of the said method. Bertone teaches the control method comprising the control steps of:

supplying a first signal from (selectively activating and deactivating) the power supply to apply a drive voltage to the motor so as to drive the motor at a constant speed (column 1, lines 17-18; lines 25-30);

driving the air through a hazard sampling system (abstract);

monitoring the speed of the motor to determine when the motor speed has stabilized for a predetermined amount of time (special circuit monitors, column 1, lines 37-38; output proportional to speed, column 2, lines 20-24);

if the motor speed stabilizes (after the speed has stabilized), monitoring the power supply voltage (low battery circuit monitors battery condition, column 1, lines 41-42; also monitoring error voltage for abnormal driving);

when the voltage of the power supply decreases, supplying a second signal from (selectively activating and deactivating) the power supply to the motor that applies the same drive voltage as the first signal so that the speed of the motor and the volume of air that the fan flows through the hood remain substantially constant (column 1, lines 18-19).

Bertone suggests that various changes may be made without departing from the spirit and scope of the invention. He teaches the motivation of his invention safety of the user, due to predictable air flow and filtering (column 1, lines 10-19)

The circuit of Bertone determines stable driving as not abnormal driving, such as, over current or a low voltage. However, it is arguable that the circuit of Bertone only determines that the driving is not abnormal, but not that the speed of the motor is stabilized. Hollenbeck teaches motor speed control application that allows the motor speed to stabilize (allows a time after the motor begins to turn, column 17, lines 20-27). Hollenbeck teaches the speed should be stable so the processor retrieves an appropriate control parameter (column 17, lines 27-57).

Considering the objective evidence, it would have been obvious to someone of ordinary skill in the art of motor control to combine a headgear, motor and fan for providing a user with a selected amount of air flow and filtration, taught by Green et al. with a motor control for providing a selected motor speed, speed controlling based on activating and deactivating the power supply, speed monitoring, abnormality monitoring, taught by Bertone, motivated for safely providing required flow, taught by Bertone, with a function to allow the motor speed to stabilized, taught by Hollenbeck, motivated to match the detected speed to the correct control parameter, taught by Hollenbeck.

Regarding claim 118, Green et al., Bertone, and Hollenbeck teach the method for maintaining a constant volume of air flowing into an air filtration system of Claim 117, and Bertone teaches the limitations wherein in said steps of supplying said first and second signals, the first and second signals are pulse width modulated (column 2, line 12). The examiner notes that the teaching of pulse modulation is already suggested by step of selectively activating and deactivating the power supply at an activation rate, as supported by the specification, but not necessarily to a signals, that is not supported.

Regarding claim 119, Green et al., Bertone, and Hollenbeck teach the method for maintaining a constant volume of air flowing into an air filtration system of Claim 117, and Bertone teaches the limitation wherein said first signal is regulated by a by a motor speed controller and is selectively set based on user actuation (manipulation of controls) of the motor speed controller (speed adjustment setpoint circuit, column 2, line 24).

Regarding claim 120, Green et al., Bertone, and Hollenbeck teach the method for maintaining a constant volume of air flowing into an air filtration system of Claim 117, and Bertone teaches the limitations wherein:

in said steps of supplying said first and second signals (selective power supply activation and deactivation), the first and second signals are (pulse width modulated column 2, line 12); and

in said step of supplying the first signal, a motor speed controller establishes the pulse width based on a user entered command to the motor speed controller (speed adjustment setpoint circuit, column 2, line 24).

Regarding claim 121, Green et al., Bertone, and Hollenbeck teach a method for maintaining a constant volume of air flowing into an air filtration system during the use of the air filtration system, the air filtration system including: a hood adapted to be worn over the head of a user; a fan beneath the hood; a motor for driving the fan; and a power supply for powering the motor, said method comprising the steps (see below) of:

supplying a first signal from (selectively activating and deactivating) the power supply to the motor (first activation rate) so that the motor runs at a set speed;

driving the fan with the motor so as that the fan causes air to flow through the hood;

monitoring the speed of the motor to determine when said speed has stabilized for a predetermined amount of time;

when the speed of the motor stabilizes (after the speed has stabilized), monitoring the power supply voltage;

when the voltage of the power supply decreases, supplying a second signal from (second activation and deactivation of) the power supply to the motor so that the motor maintains the set speed so that the volume of air the fan flows through the hood remains substantially constant.

The examiner notes that claim 121 as supported by the specification is essentially a duplicate to claim 117. Further the examiner notes that claims 122-124 are essentially copies of claims 118-120. Claim 121-124 are rejected on the same basis as claims 117-120.

Regarding claim 125, Green et al., Bertone and Hollenbeck teach a method for maintaining a constant volume of air flowing into an air filtration system during the use of the air filtration system, the air filtration system (figures 1-13) including: a hood 100 adapted to be worn over the head of a user; a fan 130 beneath the hood; a motor 1262 for driving the fan 1250; and a power supply for powering the motor (battery pack, column 4, lines 31-32) and method step

driving the fan with the motor so as that the fan causes air to flow through the hood (abstract);

to deliver the controlled air flow and air filtration that is desired (abstract, lines 4-5).

Green does not teach the motor control aspects of the said method. Bertone teaches the control method comprising the control steps of:

pulse width modulating (column 2, lines 12 and 26-27) a power signal from (selective activation and deactivation of) the power supply and supplying the modulated

power signal to the motor so as to apply a drive voltage to the motor that drives the motor at a constant speed (column 1, lines 16-18; column 2, lines 26-28);

driving the air through a hazard sampling system (abstract);

monitoring the speed of the motor to determine when the motor speed has stabilized for a predetermined amount of time (special circuit monitors, column 1, lines 37-38; output proportional to speed, column 2, lines 20-24);

if the motor speed stabilizes (after the speed has stabilized), monitoring the power supply voltage (low battery circuit monitors battery condition, column 1, lines 41-42; also monitoring error voltage for abnormal driving);

when the voltage of the power supply decreases, adjusting the pulse width modulation rate of the power signal (selective activation and deactivation) supplied to the motor so that the speed of the motor and the volume of air that the fan flows through the hood remain substantially constant (column 1, lines 18-19).

Bertone suggests that various changes may be made without departing from the spirit and scope of the invention. He suggest as the motivation of his invention safety of the user, due to predictable air flow and filtering (column 1, lines 10-19).

The circuit of Bertone determines stable driving as not abnormal driving, such as, over current or a low voltage. However, it is arguable that the circuit of Bertone only determines that the driving is not abnormal, but not that the speed of the motor is stabilized. Hollenbeck teaches motor speed control application that allows the motor speed to stabilize (allows a time after the motor begins to turn, column 17, lines 20-27).

Hollenbeck teaches the speed should be stable so the processor retrieves an appropriate control parameter (column 17, 27-57).

Considering the objective evidence, it would have been obvious to someone of ordinary skill in the art of motor control to combine a headgear, motor and fan for providing a user with a selected amount of air flow and filtration, taught by Green et al. with a motor for providing a selected motor speed, speed controlling based on pulse width modulating the power supply, speed monitoring, and abnormality monitoring, taught by Bertone, motivated for safely providing required flow, taught by Bertone, with a function to allow the motor speed to stabilized, taught by Hollenbeck, motivated to match the detected speed to the correct control parameter, taught by Hollenbeck.

Regarding claim 126, Green et al., Bertone, and Hollenbeck teach the method for maintaining a constant volume of air flowing into an air filtration system and Bertone teaches the limitation wherein the initial pulse width modulation rate of the power supply signal applied to the motor is set by a motor speed controller based on a user-entered command (user manipulation of controls) entered to vary the speed of the motor (speed adjustment setpoint circuit, column 2, line 24).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references cited on form 892 are a response to the change in the language of the amended claims.

The applicant is advised to correct the amended claims to remove the language not supported by the specification.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W. Horn whose telephone number is 571-272-8591. The examiner can normally be reached on Monday-Friday 7:00-3:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln D. Donovan can be reached on 571-272-2800, ext 33. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

rwh
November 13, 2006

LINCOLN DONOVAN
SUPERVISORY PATENT EXAMINER